

AVIATION

JANUARY 29, 1923

Issued Weekly

PRICE 10 CENTS



Civil Air Transport in South America: Junkers seaplane over the Magdalena River, Colombia

VOLUME
XIV

SPECIAL FEATURES

Number
5

FOREIGN AIR TRANSPORT BY SEAPLANE
IMPROVED EQUIPMENT FOR NIGHT FLYING
ABSTRACT OF THE CIVIL AERONAUTICS ACT
AVIATION ENGINES AT THE PARIS EXPOSITION

THE GARDNER, MOFFAT CO., INC.
HIGHLAND, N. Y.

225 FOURTH AVENUE, NEW YORK



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JANUARY 29, 1923

AVIATION

VOL. XIV. NO. 5

Member of the Audit Bureau of Circulations

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THE GARDNER, MOFFAT COMPANY, Inc., Publishers

REGULAND, N. Y.

225 FOURTH AVENUE, NEW YORK

Subscription price: Four dollars per year. Single copies ten cents. Outside, five dollars. Foreign, six dollars a year. Copyright 1923, by the Gardner, Moffat Company, Inc.

Issued every Monday. Terms nine ten days previously. Entered as second class matter, May 29, 1922, at the Post Office at Reguland, N. Y., under act of March 3, 1979.

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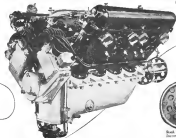
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AVIATION

Vol. XIV

JANUARY 26, 1933

No. 5

Foreign Progress in Aeroplanes

THE present state of aviation continues to encourage a large amount of information on the present status of aeroplanes in Europe. A summary of the commercial application of the airplane to transport problems is being developed in Europe, the strength of some European air forces, some British aircraft development and several accounts of the Paris airport are the outstanding subjects dealt with.

The airport is a simple one of the varied phases of foreign air activities will enable our readers to judge for themselves what a vast difference there is between the situation in Europe and in the United States. Little Belgium Fokker bi-planes were significant milestones for the present world, and is incorporating its air base, the British Royal Air Force (which does not include the De Havilland bi-planes) is increasing its present time establishment from 25 to 45 squadrons; France with 128 squadrons was to have 228—and our own Army Air Service has to be reduced with only one full strength squadron. More and more the air forces are becoming the first line of defense of European countries; here they still are considered as adjuncts of the Army and the Navy.

In the commercial field we witness the same demands between Europe and America. One million pounds of air-borne mail service passed through the simple system of Paris in the last twelve months—a threshold across over the gas you—this does not include the very important aircraft movements between France and America, which have their termini in Toulouse. This million pounds of mail service was carried in aircraft because the aeroplanes subjected the value of that transportation.

What have we in this country to give alongside of such perfect air transport? Despite the steady perfect running of the Air Mail Service in practically continuous in 50 per cent of our population. Means there is no volume of demand for air mail service. Hence, with even increased fuel for the Air Mail is threatened with extinction in Congress. The fifty million before it expires in a year are not saved because the fuel is not in. Most people are weary because of the fact that a letter was carried in an airplane.

Why is not the Air Mail better maintained?

Possibilities of the Hot-Air Balloon

INTEREST in the general possibilities of the hot-air balloon, as a commercial, has recently revived in France, the author of many of lighter-than-air craft. The greatly increased cost of fuel gas, not to speak of balloons, has in much increased interest in French activities that some accidents are now occurring in France, the difficulty by maintaining the time honored monogamous.

As these troubles with monogamous history have, the first of them before, built by the Montgolfier brothers are still in the air which was produced by burning damp gases under the open neck of the envelope. On later monogamous there was a great deal of the reason of the balloon which carried the passengers, and this caused the balloon to lift the air and pushing the direction of flight. But no monogamous ever made a very long flight, for the air was a very small volume of gas, and the lift of the balloon quickly disappeared as the temperature of the contained air drops. Besides the open fire place, which adds to the fire brand, several serious accidents have been caused thereby.

The new development of the monogamous program to overcome these two drawbacks by the use of a perfect of burner which would give a much greater lift (about 10,000 calories per kilogram of fuel) than the first, and by making the envelope of improved fabric. It is not only the first ever thought of powder the lift of heated air will be much less than that of the hot and gas elements (20 ft. per 1000 cu. ft.) as against 20 to 30 ft.) it will be sufficient for sport purposes, while the hot air will be used as a medium temperature of the contained air, and so afford the possibility of long flights.

It is interesting to note that the monogamous seemed to be a type to be a date as likely as likely, just the French aerologist built a hot-air balloon of 40,000 cu. ft. capacity. This craft carried eight passengers on one continent and was the latest hot air balloon of its kind ever built.

Correcting a Misleading Term

THE aircraft survey questionnaire used by the United States Tariff Commission affords aircraft manufacturers an excellent opportunity to assist the government in the development of the N.A.C.A. standard aerodynamic measurements. The questionnaire is being distributed to all aircraft manufacturers.

In the wording of third paragraph 371 open is very misapprehension, or is the designation sufficiently clear and definite?

To the very manufacturer who fills out the questionnaire should answer that it is open to misapprehension in that and paragraph means "airplane, hydroplane and parts of the airplane."

As everybody in the aircraft industry and in the motor boat industry knows—both industries are equally interested in this "hydroplane" is a flying boat, and not an airplane equipped for use on the water. Despite the inexact term which describes the latter. Hence the wording of the law is nothing but clear and definite, and the misapprehension which may result therefrom should be prevented by the use of the correct term.

Aeronautical Engines at the Paris Exposition

Exhibits Range from 1000 hp. Lorraine-Dietrich
To 10 hp. Gnome Radial for Auxiliary Sumpumps

The following notes on the new engine exhibits at the Paris Salon are reproduced from our exclusive English correspondence *The Aeroplane*. The accompanying table of characteristics is from *L'Aérophile*.

General

The French exhibit covered the whole range of their well-known radial engines—which differ very little from their prototypes of before the war—except that all main two-stroke engines are now mechanically supercharged. The type in production are 30 hp., 2 cylinders; the 50 hp., 6 cylinders; and the 100 hp., 14 cylinders. These engines are extensively used for cruising and training machines and appear to give excellent service.

Form

The French engines, which have appeared at the Salon now for three consecutive years, have it in usual passed the French government type test, and the French firm has it understood received approval orders for the 500 hp. model. At previous shows three French engines were killed to appear—a 300 hp. 8-cylinder V, a 400 hp. 12-cylinder V, and a 500 hp. 14-cylinder W type. The 500 hp. model seems to have been discontinued. The 100 hp. 12-cylinder V, here supplanted by an engine of similar power and equal number of cylinders, but in one of the W type. The general design however is not greatly altered.

The two engines are of similar design, and employ similar

cylinders and connecting rod units, valve gear, etc., and differ only in that one has a four-stroke crankshaft and four rows of cylinders, and the other a six-stroke crankshaft and six rows of cylinders. The cylinders are of equal bore but the 500 hp. model has an increased stroke.

The cylinders are mounted from side to side, have water-cooled cylinder heads and are each up in two-cylinder blocks each with a common cooled steel water jacket. There are four coolant tubes per cylinder row of crankshaft—operated by motor and pump runs from mechanical control in the top of the crank case. Aluminum pistons and timber connecting rods are used.

The big and sturdy, a of the most articulated type—the master rod carrying the whole main journal and being provided with deep flanges on the top and strong between which the two side rods are pivoted.

The engine is fitted with two magneto and a generator and two carburetors and is equipped with the French economy level reduction gear for the aircraft. A series of such gears are provided and interchangeable and with another giving a range of gear ratios of 1 : 2.1 : 3.64 : 1 : 1.07 or 1 : 1.5. Direct drive can also be provided.

Construction

The Société des Réfractaires Français at Billancourt exhibited the well-known Le Rhône engine in the standard 50, 115, and 150 hp. models—which show no change of size. In addition they exhibited the "Vagabond" 100 hp. two-cylinder radial, de-

TABLE OF CHARACTERISTICS OF ENGINES AT THE PARIS SALON

Make	Model	Power (hp.)	Weight (lb.)	Stroke (in.)	Compression ratio	Speed (rpm.)	Height (in.)	Length (in.)	Width (in.)	Clearance (in.)	Other	Remarks
Aviation	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
"	500	500	500	500	500	500	500	500	500	500	500	500
"	115	115	115	115	115	115	115	115	115	115	115	115
"	50	50	50	50	50	50	50	50	50	50	50	50
"	150	150	150	150	150	150	150	150	150	150	150	150
"	100	100	100	100	100	100	100	100	100	100	100	100
"	125	125	125	125	125	125	125	125	125	125	125	125
"	150	150	150	150	150	150	150	150	150	150	150	150
"	175	175	175	175	175	175	175	175	175	175	175	175
"	200	200	200	200	200	200	200	200	200	200	200	200
"	225	225	225	225	225	225	225	225	225	225	225	225
"	250	250	250	250	250	250	250	250	250	250	250	250
"	275	275	275	275	275	275	275	275	275	275	275	275
"	300	300	300	300	300	300	300	300	300	300	300	300
"	325	325	325	325	325	325	325	325	325	325	325	325
"	350	350	350	350	350	350	350	350	350	350	350	350
"	375	375	375	375	375	375	375	375	375	375	375	375
"	400	400	400	400	400	400	400	400	400	400	400	400
"	425	425	425	425	425	425	425	425	425	425	425	425
"	450	450	450	450	450	450	450	450	450	450	450	450
"	475	475	475	475	475	475	475	475	475	475	475	475
"	500	500	500	500	500	500	500	500	500	500	500	500
"	525	525	525	525	525	525	525	525	525	525	525	525
"	550	550	550	550	550	550	550	550	550	550	550	550
"	575	575	575	575	575	575	575	575	575	575	575	575
"	600	600	600	600	600	600	600	600	600	600	600	600
"	625	625	625	625	625	625	625	625	625	625	625	625
"	650	650	650	650	650	650	650	650	650	650	650	650
"	675	675	675	675	675	675	675	675	675	675	675	675
"	700	700	700	700	700	700	700	700	700	700	700	700
"	725	725	725	725	725	725	725	725	725	725	725	725
"	750	750	750	750	750	750	750	750	750	750	750	750
"	775	775	775	775	775	775	775	775	775	775	775	775
"	800	800	800	800	800	800	800	800	800	800	800	800
"	825	825	825	825	825	825	825	825	825	825	825	825
"	850	850	850	850	850	850	850	850	850	850	850	850
"	875	875	875	875	875	875	875	875	875	875	875	875
"	900	900	900	900	900	900	900	900	900	900	900	900
"	925	925	925	925	925	925	925	925	925	925	925	925
"	950	950	950	950	950	950	950	950	950	950	950	950
"	975	975	975	975	975	975	975	975	975	975	975	975
"	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000

(1) Two vertical rows of cylinders; (2) vertical with equal cylinder.

(3) Single cylinder; (4) two cylinders; (5) three cylinders; (6) four cylinders.

(7) Vertical; (8) horizontal; (9) vertical; (10) horizontal; (11) vertical; (12) horizontal.

(13) Vertical; (14) horizontal; (15) vertical; (16) horizontal; (17) vertical; (18) horizontal.

(19) Vertical; (20) horizontal; (21) vertical; (22) horizontal; (23) vertical; (24) horizontal.

(25) Vertical; (26) horizontal; (27) vertical; (28) horizontal; (29) vertical; (30) horizontal.

(31) Vertical; (32) horizontal; (33) vertical; (34) horizontal; (35) vertical; (36) horizontal.

(37) Vertical; (38) horizontal; (39) vertical; (40) horizontal; (41) vertical; (42) horizontal.

(43) Vertical; (44) horizontal; (45) vertical; (46) horizontal; (47) vertical; (48) horizontal.

(49) Vertical; (50) horizontal; (51) vertical; (52) horizontal; (53) vertical; (54) horizontal.

(55) Vertical; (56) horizontal; (57) vertical; (58) horizontal; (59) vertical; (60) horizontal.

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(97) Vertical; (98) horizontal; (99) vertical; (100) horizontal; (101) vertical; (102) horizontal.

(103) Vertical; (104) horizontal; (105) vertical; (106) horizontal; (107) vertical; (108) horizontal.

(109) Vertical; (110) horizontal; (111) vertical; (112) horizontal; (113) vertical; (114) horizontal.

(115) Vertical; (116) horizontal; (117) vertical; (118) horizontal; (119) vertical; (120) horizontal.

(121) Vertical; (122) horizontal; (123) vertical; (124) horizontal; (125) vertical; (126) horizontal.

(127) Vertical; (128) horizontal; (129) vertical; (130) horizontal; (131) vertical; (132) horizontal.

(133) Vertical; (134) horizontal; (135) vertical; (136) horizontal; (137) vertical; (138) horizontal.

(139) Vertical; (140) horizontal; (141) vertical; (142) horizontal; (143) vertical; (144) horizontal.

(145) Vertical; (146) horizontal; (147) vertical; (148) horizontal; (149) vertical; (150) horizontal.

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(157) Vertical; (158) horizontal; (159) vertical; (160) horizontal; (161) vertical; (162) horizontal.

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